**COMPUTER SCIENCE - CSC**

**CSC 108 Introduction to Web Computing**  
3 Credits  
Introduction to computer science through web sites, web pages, web page programming, HTML, XML, CSS and JavaScript. The history and social impact of computers, networks and the World Wide Web are included in the course.  
Corequisite: CSC 108L.  
Fulfills College Core: Ethics, Field 7 (Mathematical Sciences)  
Offered: fall & spring.

**CSC 108L Introduction to Web Computing Laboratory**  
1 Credit  
Required lab for CSC 108.  
Corequisite: CSC 108.

**CSC 111 Introduction to Programming**  
3 Credits  
Algorithms, programming, computers, and applications to problem solving in Python.  
Corequisite: CSC 111L.  
Fulfills College Core: Field 7 (Mathematical Sciences)  
Offered: every fall, spring, & summer.

**CSC 111L Introduction to Programming Laboratory**  
1 Credit  
Required lab for CSC 111.  
Corequisite: CSC 111.

**CSC 112 Data Structures**  
3 Credits  
Basic concepts of object-oriented programming, recursion, and data structures, including lists, stacks, queues, and trees using Python.  
Prerequisite: minimum grade of C in CSC 111 & CSC 111L.  
Corequisite: CSC 112L.  
Offered: every fall, spring, & summer.

**CSC 112L Data Structures Laboratory**  
1 Credit  
Required lab for CSC 112.  
Prerequisite: minimum grade of C in CSC 111 & CSC 111L.  
Corequisite: CSC 112.

**CSC 121 Large Scale Programming**  
3 Credits  
Introduction to the design, implementation, and testing of larger software systems. Intensive instruction in Java including graphics and object-oriented design.  
Prerequisite: minimum grade of C in CSC 112 & CSC 112L.  
Corequisite: CSC 213L.  
Offered: every spring.

**CSC 121L Large Scale Programming Laboratory**  
1 Credit  
Required lab for CSC 213.  
Prerequisite: minimum grade of C in CSC 112 & CSC 112L.  
Corequisite: CSC 213.

**CSC 213 Large Scale Programming**  
3 Credits  
The design of operating system software, distributed applications, client/server and other models, security issues, and parallel programming on a High Performance Computing Cluster.  
Prerequisite: CSC 253, CSC 253L, & either minimum grade of C in CSC 112 & CSC 112L or minimum grade of C in CSC 213 & CSC 213L.  
Corequisite: CSC 330L.  
Offered: every fall.

**CSC 213L Large Scale Programming Laboratory**  
1 Credit  
Required lab for CSC 213.  
Prerequisite: minimum grade of C in CSC 112 & CSC 112L.  
Corequisite: CSC 213.

**CSC 253 Computer Hardware**  
3 Credits  
Introduction to digital logic, Boolean algebra, hardware and computer organization. Overview of current architectures.  
Prerequisite: minimum grade of C in CSC 111 & CSC 111L.  
Corequisite: CSC 253L.  
Offered: once a year.

**CSC 253L Computer Hardware Laboratory**  
1 Credit  
Required lab for CSC 253.  
Prerequisite: minimum grade of C in CSC 111 and CSC 111L.  
Corequisite: CSC 253.

**CSC 251 Automata and Algorithms**  
3 Credits  
Formal language theory including finite and pushdown automata, grammars, Turing Machines and the Halting Problem. Provides an introduction to the design and analysis of algorithms, including classes of problems and methods for analysis.  
Prerequisite: minimum grade of C in CSC 112 & CSC 112L.  
Corequisite: CSC 281L.  
Offered: every spring.

**CSC 281L Automata and Algorithms Lab**  
1 Credit  
Required lab for CSC 281.  
Prerequisites: Minimum grade of C in CSC 112 and CSC 112L.  
Corequisite: CSC 281.  
Offered: every spring.

**CSC 300 Information Organization and Processing**  
3 Credits  
Databases, high-level organization and processing of information, SQL, and modern NoSQL systems.  
Prerequisite: minimum grade of C in CSC 112 & CSC 112L or or minimum grade of C in CSC 213 & CSC 213L.  
Corequisite: CSC 310L.  
Offered: every fall & spring.

**CSC 310L Information Organization and Processing Laboratory**  
1 Credit  
Required lab for CSC 310.  
Prerequisite: minimum grade of C in CSC 112 and CSC 112L or minimum grade of C in CSC 213 & CSC 213L.  
Corequisite: CSC 310.  
Offered: occasionally.

**CSC 320 The Social Impact of Computing**  
3 Credits  
Examines the societal issues involved in computing such as accessibility, ethical issues, privacy, censorship, social media, and professional responsibilities. Includes applications of information literacy techniques to the major.  
Prerequisite: minimum grade of C in CSC 112 & CSC 112L or or minimum grade of C in CSC 213 & CSC 213L.  
Corequisite: CSC 320L.  
Fulfills College Core: Advanced Writing-Intensive  
Offered: once a year.

**CSC 330 Distributed Computing**  
3 Credits  
The design of operating system software, distributed applications, client/server and other models, security issues, and parallel programming on a High Performance Computing Cluster.  
Prerequisite: CSC 253, CSC 253L, & either minimum grade of C in CSC 112 & CSC 112L or minimum grade of C in CSC 213 & CSC 213L.  
Corequisite: CSC 330L.  
Offered: every fall.

**CSC 330L Distributed Computing Laboratory**  
1 Credit  
Required lab for CSC 330.  
Prerequisite: CSC 253, CSC 253L, & (minimum grade of C in CSC 112 & CSC 112L or or minimum grade of C in CSC 213 & CSC 213L).  
Corequisite: CSC 330.  
Offered: every fall.

**CSC 351 Comparative Programming Languages**  
3 Credits  
A study of programming languages and their implementations. Programming in logical and functional programming languages is included.  
Prerequisite: minimum grade of C in CSC 112 & CSC 112L or minimum grade of C in CSC 213 & CSC 213L.  
Corequisite: CSC 351L.  

**CSC 351L Comparative Programming Languages Laboratory**  
1 Credit  
Required lab for CSC 351.  
Prerequisites: minimum grade of C in CSC 112 and 112L or minimum grade of C in CSC 213 & CSC 213L.  
Corequisite: CSC 351.  
Offered: spring of odd-numbered years.
CSC 360 Intelligent Systems 3 Credits
An introduction to intelligent systems including logic and rule-based systems, machine learning, and applications of AI.
Prerequisite: completion of MAT 191 or MAT 230 and minimum grade of C in either CSC 112 & CSC 112L or CSC 213 & CSC 213L. Corequisite: CSC 360L.

CSC 360L Intelligent Systems Laboratory 1 Credit
Required lab for CSC 360.
Prerequisite: completion of MAT 191 or MAT 230 and minimum grade of C in either CSC 112 and 112L or in CSC 213 & CSC 213L. Corequisite: CSC 360.
Offered: occasionally.

CSC 371 Cybersecurity Principles 3 Credits
This course examines the landscape and the broad areas of cybersecurity which includes topics such as: Symmetric & Public-Key Encryption, Access Control, Database Security, Malware, DoS (Denial-of-Service) Attacks, Intrusion Detection & Firewalls, Software Security, Security Management & Policies, Internet Security, and Legal & Ethical Aspects of Cybercrime. Students will also complete hands-on labs and exercises to reinforce their working knowledge of computer, network and information security topics.
Prerequisite: CSC 310 and CSC 310L; may be taken concurrently.
Corequisite: CSC 371L.
Offered: every fall.

CSC 371L Cybersecurity Principles Lab 1 Credit
Required lab for CSC 371.
Prerequisite: CSC 310 and CSC 310L; may be taken concurrently.
Corequisite: CSC 371.
Offered: occasionally.

CSC 372 Ethical Hacking and Network Defense 3 Credits
This course provides an in-depth understanding of how to effectively protect computer networks. Students will learn the tools and penetration testing methodologies used by ethical hackers. In addition, the course provides a thorough discussion of what and who an ethical hacker is and how important they are in protecting corporate and government data from cyber attacks. Students will learn updated computer security resources that describe new vulnerabilities and innovative methods to protect networks. Also covered is a thorough update of federal and state computer crime laws, as well as changes in penalties for illegal computer hacking.
Prerequisite: CSC 213, CSC 213L, CSC 310, CSC 310L. Corequisite: CSC 372L.
Offered: every spring.

CSC 372L Ethical Hacking and Network Defense Lab 1 Credit
Required Lab for CSC 372
Prerequisite: CSC 213, CSC 213L, CSC 310 and CSC 310L. Corequisite: CSC 372.
Offered: every spring.

CSC 380 Web Development 3 Credits
Web design principles, programming and scripting (both client-side and server-side), client/server mechanisms, search engines, and security.
Prerequisite: minimum grade of C in CSC 111 & CSC 111L. Corequisite: CSC 380L.

CSC 380L Web Development Laboratory 1 Credit
Required lab for CSC 380.
Prerequisite: minimum grade of C in CSC 111 and 111L. Corequisite: CSC 380.

CSC 391 Computer Science Junior Seminar 1 Credit
Topic-focused exploration involving students and faculty.
Prerequisite: permission of instructor.

CSC 395 Software Engineering 3 Credits
An examination of a variety of techniques and concepts that have been created to improve the software production process. Includes discussions of software processes, Agile software development, requirements engineering, testing, and software evolution.
Prerequisite: minimum grade of C in CSC 213 & CSC 213L. Corequisite: CSC 395L.

CSC 395L Software Engineering Lab 1 Credit
Required lab for CSC 395.
Prerequisite: minimum grade of C in CSC 213 and 213L Corequisite: CSC 395.

CSC 400 Special Topics in Computing 3 Credits
Current topics of interest to faculty and students. Possible topics: cryptography, advanced scripting languages, networking, etc.
Prerequisite: Minimum grade of C in CSC 281, CSC 281L, MAT 111, and in either MAT 191 or MAT 230. Corequisite: CSC 400L. Restriction: must be junior or senior Computer Science major.

CSC 400L Special Topics in Computing Laboratory 1 Credit
Required lab for CSC 400.
Prerequisites: Minimum grade of C in CSC 281, CSC 281L, MAT 111 and in either MAT 191 or MAT 230. Corequisite: CSC 400. Restriction: must be junior or senior Computer Science major.
Offered: every fall & spring.

CSC 480 Research Experience 0 Credits
Research project done in conjunction with a faculty advisor.
Offered: every fall & spring.

CSC 481 Research Experience 1 Credit
Research project done in conjunction with a faculty advisor for credit.
Offered: every fall & spring.

CSC 491 Computer Science Senior Seminar 1 Credit
Topic-focused exploration involving students and faculty.
Prerequisite: permission of instructor.

CSC 497 Internship 1-3 Credits
Special projects for local institutions/businesses. Must be related to a specific focused task and involve a significant learning component. Internships require an application and approval by the associate dean. Credit is not given simply for a part-time job. Approved project proposal and results documentation required. Does not count as a CSC elective.
Prerequisite: permission of chair & associate dean.

CSC 498 Independent Project 3 Credits
A directed project course that includes research, design, and implementation of a software system.
Prerequisite: permission of instructor.

CSC 499 Independent Study 1-4 Credits
An in-depth study of a specific computing topic. Independent studies require an application and approval by associate dean.
Prerequisite: junior or senior standing; & permission of instructor, chair, & associate dean.